

In the Drawings:

Please approve the drawing changes as shown in red on the attached marked-up copies of Figures 1, 18 and 19. Also enclosed are Replacement Sheets for Figures 1, 18 and 19 including the same proposed drawing changes.

REMARKS

As a preliminary matter, Applicants note that on page 2 (lines 7-8) of the January 11, 2006 Office Action, the Examiner incorrectly indicated that “claims 1-15 are not pending” (emphasis added). Applicants believe that the Examiner intended to state that “claims 1-15 are now pending.” Clarification is requested.

With regard to the drawings, Applicants have included herewith marked-up copies of Figures 1, 18 and 19, with the proposed changes in red. In Figure 1, two of the reference numbers (86 and 87) were reversed, and are being corrected. In Figures 18 and 19, the legend “Prior Art” is being added. Approval of the proposed drawing changes is respectfully requested. Also enclosed are Replacement Sheets for Figures 1, 18 and 19, with the proposed changes incorporated therein.

Claims 1, 6, 8 and 13 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,936,693 to Yoshida et al. Applicants respectfully traverse this rejection.

Applicants respectfully submit that the Yoshida et al. reference does not disclose all of the features of the present invention. More specifically, the Yoshida et al. reference does not disclose a liquid crystal display device with “a pixel region including at least one *low effective voltage area* in which an *effective voltage applied by the pixel and the common electrodes* to the liquid crystal is lower than *a voltage applied between the pixel and the common electrodes at another area*, the at least one low voltage area occupying part of the region in a predetermined area ratio, the pixel region having a threshold voltage that is

different between the at least one low voltage area and said another area” (emphasis added), as defined in independent Claims 1, 6, 8 and 13.

In the present invention of independent Claims 1, 6, 8 and 13, a pixel region is divided into two or more areas, where one of the areas is a low effective voltage area, where the effective voltage applied to the liquid crystal is lower than the actual voltage. Since the amount of voltage applied to the liquid crystal affects the tilt angle within the region, the liquid crystal molecules within each region will tilt differently from liquid crystal molecules in another region with a different effective voltage applied thereto. By appropriately selecting the different regions, the display characteristics can be improved by reducing the variations in chromaticity from different viewing angles.

The features of Claims 1, 6, 8 and 13 can be realized with a number of different configurations, for example, such as shown by the embodiment of Figures 2 and 3, as well as by the embodiments of 4, 6, 7, and 8 (however, not all embodiments are satisfied by each of Claims 1, 6, 8 and 13). Other embodiments of the inventions of Claims 1, 6, 8 and 13 are also shown and described in the instant application. Turning to the embodiment of Figures 2 and 3, there is a pair of substrates 2, 4, with one of the substrates including a pixel electrode 16 and the other substrate including a common electrode 42. Liquid crystal 6 is sealed between the substrates. As can be seen in Figure 2, the pixel region includes two Areas, A and B, with Area B being a low effective voltage region. As can also be seen in Figure 2, the tilt characteristics of Area A are different from those of Area B. This is the case because in Area B, the *effective* voltage applied to the liquid crystal from electrodes 16,42 has been

lowered from the *actual* voltage by the inclusion of dielectric layer 50, which is found in Area B but not in Area A. Different methods of lowering the effective voltage, other than or in addition to using a dielectric layer, are also contemplated as being within the scope of the invention. For example, the Figure 4 embodiment includes slits 46; the Figure 6 embodiment varies the thickness of the color filter layers 40 in each area, as well as including dielectric layers 50; the Figure 7 embodiment includes dielectric layers 50 of a different thickness in each area; and the Figure 8 embodiment varies the voltage applied to each color filter area, as well as including dielectric layers 50. Other methods of lowering the effective voltage are also contemplated as being within the scopes of Claim 1, 6, 8 and 13.

In contrast to the devices defined by Claims 1, 6, 8 and 13, which each include a pixel with a low effective voltage area in which an effective voltage applied by the pixel and the common electrodes is lower than the actual voltage applied by the same electrodes, the devices of Figures 29 and 31 of the Yoshida et al. reference each include regions where the voltage is changed due to the inclusion of overlying electrodes 35. For example, Figures 29 and 32 of the Yoshida et al. reference each include areas S1 and S2. However, while the voltage in area S2 is applied between the pixel electrode 22 and the common electrode 31, the voltage in area S1 is applied between pixel electrode 22 and overlaying electrode 35. Thus, the devices of Figures 29 and 32 of the Yoshida et al. reference do not satisfy Claims 1, 6, 8 and 13 of the present application because the voltages applied in areas S1 and S2 are not both applied between the same electrodes, but instead the voltage of area S1 is applied between pixel electrode 22 and overlaying electrode 35, while the voltage of area S2 is

applied between pixel electrode 22 and common electrode 31. More specifically, the Yoshida et al. reference does not include “a pixel region with at least one *low effective voltage area* in which an *effective voltage applied by the pixel and the common electrodes* to the liquid crystal is lower than a voltage applied between *the pixel and the common electrodes at another area*,” (emphasis added), as defined in independent Claims 1, 6, 8 and 13. Accordingly, as all of the features of independent Claims 1, 6, 8 and 13 are not disclosed in the Yoshida et al. reference, Applicants respectfully request the withdrawal of this §102(b) rejection of independent Claims 1, 6, 8 and 13.

Claims 1, 9-12, 14, and 15 stand rejected under 35 U.S.C. §102(e) as being anticipated by United States Patent Application Publication No. 2003/0058374 to Takeda et al. Applicants respectfully traverse this rejection.

Applicants respectfully submit that the Takeda et al. reference fails to disclose all of the features of the present invention as defined in independent Claim 1. More specifically, the Takeda et al. reference fails to disclose a liquid crystal display that includes, *inter alia*, a pixel region with a color filter layer having one color “wherein the effective voltage in the pixel region is different from that in another pixel region including a color filter layer having another color”, as defined in independent Claim 1.

Applicants’ Figures 6, 7 and 8 show three different ways of varying the effective voltage for each of the different colors. In the Figure 6 embodiment, the effective voltage is varied by a combination of dielectric layers 50 with color filter layers 40 of different thicknesses for each color. In the Figure 7 embodiment, the effective voltage is

varied by utilizing dielectric layers 50 of different heights. In the Figure 8 embodiment, the effective voltage is varied by varying the voltage applied to each color filter area, as well as by utilizing dielectric layers 50.

In contrast, the device of the Takeda et al. reference fails to disclose any correlation between the effective voltage and the different colors of the color filter layers. Accordingly, for at least this reason, Applicants respectfully request the withdrawal of this §102(e) rejection of independent Claim 1 and associated dependent Claims 9-12, 14 and 15.

Claims 2-5 stand rejected under 35 U.S.C. §103 as being unpatentable over Takeda et al. in view of United States Patent Application Publication No. 2002/0030780 to Nishida et al. Claim 7 stands rejected under 35 U.S.C. §103 as being unpatentable over Takeda et al. in view of United States Patent Application Publication No. 2001/0040546 to Ohmuro et al. Applicants respectfully traverse these rejections.

Applicants respectfully submit that the Takeda et al. reference does not qualify as prior art under 35 U.S.C. §103 because the Takeda et al. reference and the instant application were, at the time the invention was made, owned by the same entity. *See* 35 U.S.C. §103(c). As discussed in MPEP §706.02(l)(1), for applications such as this one which were filed on or after November 29, 1999, subject matter which was previously considered as prior art under former 35 U.S.C. § 103 via 35 U.S.C. § 102(e) is now disqualified as prior art against the claimed invention if that subject matter and the claimed invention were, at the time that the invention was made, owned by the same person or entity or subject to an assignment to the same person or entity.

In the instant case, Applicants respectfully submit that both the present application and the Takeda et al. reference were, at the time that the claimed invention was made, commonly owned by the same entity, Fujitsu Display Technologies Corporation. (Both inventions have now been assigned to Sharp Kabushiki Kaisha). The Takeda et al. reference, which has Serial No. 10/236,002, was assigned to Fujitsu Display Technologies Corporation in an assignment recorded on November 27, 2002, as evidenced in the Assignment Records on Reel 013536, Frame 0342. After an intermediate assignment, the reference was subsequently assigned to Sharp Kabushiki Kaisha in an assignment recorded on July 14, 2005 on Reel 016345 and Frame 0210. The present application, Serial No. 10/808,218, was also assigned to Fujitsu Display Technologies Corporation (recorded on July 2, 2004, Reel/Frame 01537/0263), and, after an intermediate assignment, was subsequently assigned to Sharp Kabushiki Kaisha (recorded on July 14, 2005, Reel/Frame 016345/0210).

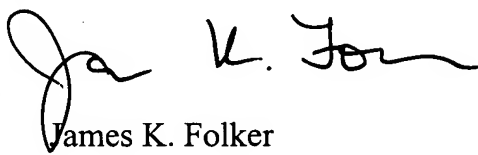
Accordingly, as evidence establishing common ownership has been provided (i.e., as provision (a)(5)(i) of 37 C.F.R. § 1.104 has been met), Applicants respectfully request that the Takeda et al. reference be withdrawn as valid § 103 prior art. *See* MPEP §706.02(I)(2)(II). Since the Takeda et al. reference should be withdrawn as prior art, Applicants respectfully submit that the §103 rejections of Claims 2-5 and 7 under Takeda et al. in view of either Nishida et al. or Ohmuro et al. should be withdrawn.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. Should the Examiner be of the opinion that a telephone conference

would aid in the prosecution of the application, or that outstanding issues exist, the Examiner is invited to contact the undersigned.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 
James K. Folker
Registration No. 37,538

April 11, 2006

Suite 2500
300 South Wacker Drive
Chicago, Illinois 60606
(312) 360-0080

Customer No. 24978
P:\DOCS\1324\70174\9Y5625.DOC

1/10

FIG.1

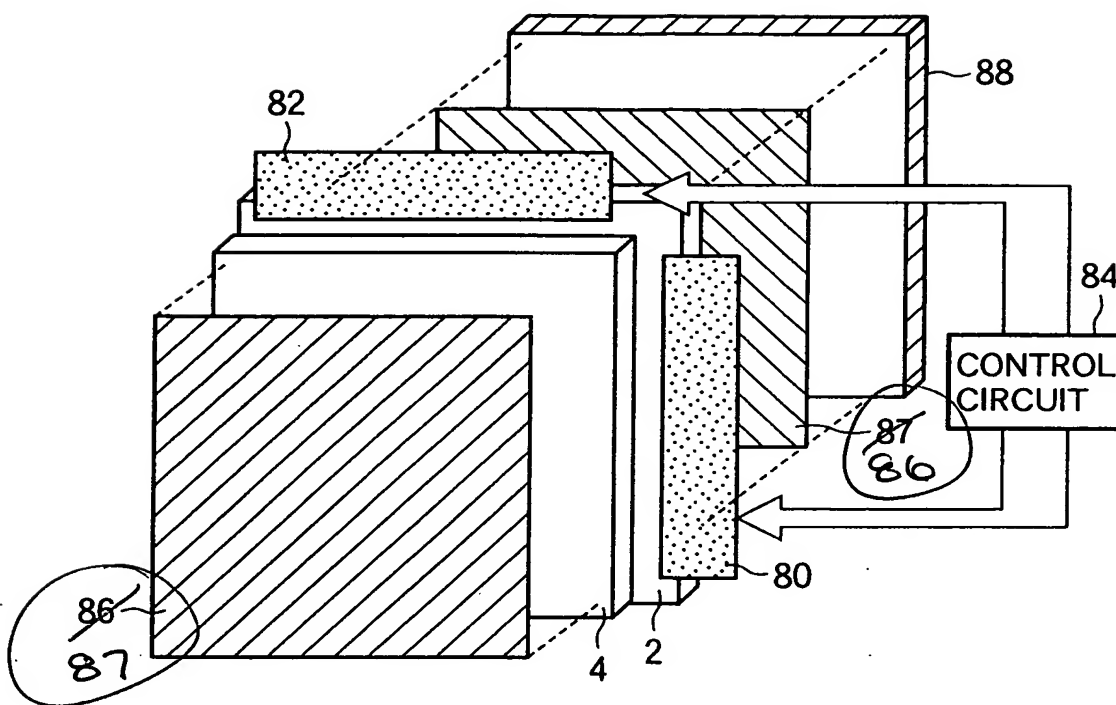
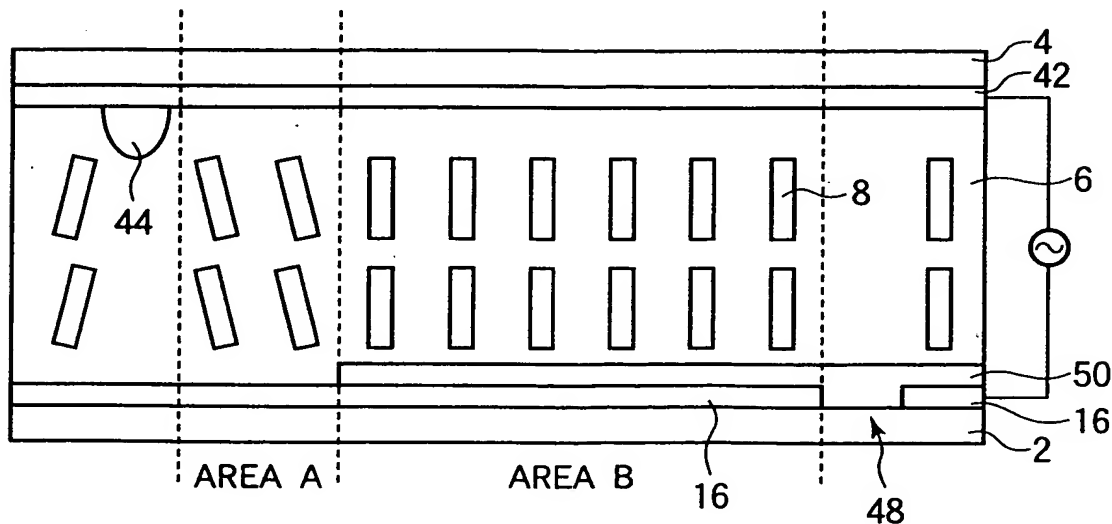


FIG.2



10/10

FIG.18
PRIOR ART

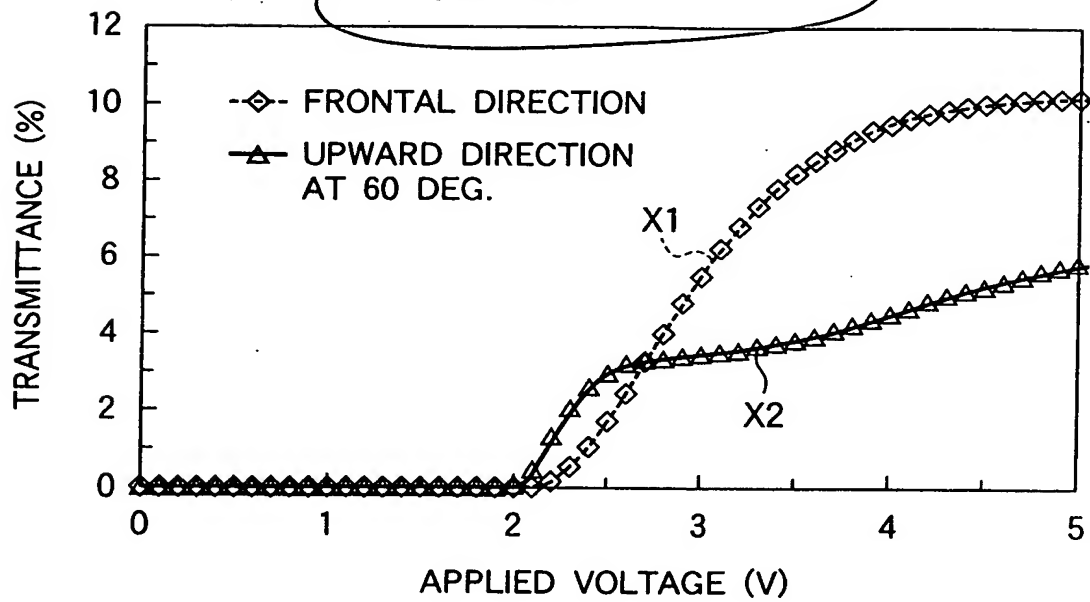


FIG.19
PRIOR ART

